

AMENDMENTS TO THE CLAIMS

The listing of the claims will replace the previous version, and the listing:

Listing of the Claims

1. (Currently amended) A method of producing a monolithic reactive porous support, comprising:

    adding a component containing a reactive site to a sol-gel reaction solution, and

    inducing sol-gel transformation accompanying phase separation to obtain the reactive porous support having a backbone substantially formed of metaloxane bonds and hydrocarbon chains, continuous open pores large enough to accommodate a liquid flow through the support, and reactivity on a surface thereof.

2. (Currently amended) A method of producing a monolithic reactive porous support according to claim 1, wherein said open pores have an average diameter of [[100]] 200 nm or greater and a volume fraction of [[20%]] 40% or greater.

3. (Previously presented) A method of producing a monolithic reactive porous support according to claim 1, wherein a porous material to become said reactive porous support includes a porous material formed in a column shape with a covered side surface, in a capillary with a diameter of 1 mm or less, or in a groove with a width of 100  $\mu$ m or less formed in a substrate, or combination thereof to form a continuous flow structure.

4. (Currently amended) A method of producing a monolithic reactive porous support according to claim 1, wherein said reactive site includes comprises at least one of a noble metal catalyst; a metal oxide catalyst; a biochemical catalyst including

an enzyme; a protein or polypeptide inducing an antigen-antibody reaction; a multiple bond capable of an addition reaction; an organic functional group capable of a ring-opening reaction including an epoxy ring; an organic functional group capable of a poly-condensation reaction; a acidic or basic functional group; an ion exchange functional group; a donor or acceptor of a charge transfer reaction; a functional group capable of forming a complex; a functional group containing a complex metal; [[and]] or a combination thereof.

5. (Previously presented) A method of producing a monolithic reactive porous support according to claim 1, wherein said reactive site is a surface of a fine particle coexisting during a sol-gel reaction.

6. (Withdrawn) A support having a backbone structure obtained by the method according to claim 1, said backbone structure having the reactive site on a surface thereof and pores with a diameter of 100 nm or greater.

7. (Withdrawn) A system device including a combination of a plurality of the monolithic reactive porous supports according to claim 6.

8. (New) A method of producing a monolithic reactive porous support, comprising:

    dissolving a starting material containing a functional group to be a reactive site in a solution, and

    reacting the starting material with a precursor of a monolithic porous gel including silica, a metal oxide forming a gel network, and an organic-inorganic hybrid composition

containing a siloxane bond and a hydrocarbon chain, thereby producing a gel of a composition with continuous pores having a diameter of 100 nm or greater, a backbone substantially formed of metaloxane bonds and hydrocarbon chains and a reactivity on a surface thereof.

9. (New) A method of producing a monolithic reactive porous support according to claim 8, wherein after the gel of the composition with continuous pores is produced, a compound containing reactive sites additionally reacts with a porous surface of the monolithic reactive porous material in a proper step between a wet gel formation and a final drying heat treatment.